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REQUEST FOR GRANT OF A PATENT

1. Applicant: (71)

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2. Attorney: (74)

3. Name of the invention: (54)

Vane pump with movable sleeve

Name of the invention on English:

Vane pump with movable sleeve

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☐ The inventor does not want to be indicated in the application

5. Priority: (30)

6. Basic application number: (61)

7. Basic application number in case of divisional application (62)

8. Additional sheets:

- ☐ Declaration on legal bases to file the application
- ☐ Data regarding other inventors
- ☐ Data regarding other applicants
- ☐ Declaration of collective representative
- ☐ Inventor's declaration that does not want to be as inventor
- ☐ Certificate of exhibition of the invention on internationally recognized fair
- ☐ Evidence of depositing of biological material
- ☐ Power of Attorney
- ☐ Copy of the Priority Application
- ☒ Evidences of paid taxes

9. References of the application:

Number of pages of the description: 1
Number of patent claims 1
Number of drawings: 3
Abstract ☒

10. Sign and stamp:

Application date: February 3, 2004

Confirmed application date (22) February 3, 2004

IP Offices signature and stamp

Application number: (21)
П-105/04

VANE PUMP WITH MOVABLE SLEEVE

Pump (Fig. 1) comprises casing (1), rotor with vanes and shaft (2), movable sleeve (3), two lids (4), two end stops (5) and two supports (6 and 7).

Movable sleeve (3) has two apertures (a). It is obvious from the Fig. 6 that the arcs (m and n) are unequal (Fig. 2), so it is necessary to overcome this disparity in the moment when vanes are approaching the aperture (a). Solution to this problem is obtained by one end of each aperture being slanted (Fig. 7). When the sleeve (3) moves axially, the vanes will reach the aperture (a) earlier or later.

The slanted end of the aperture on one side of the sleeve (3) is 180 degrees opposed to the slanted end on the other side.

Circulation channels (b) can be executed in three variants:

- first variant Fig 3: circulation channels (b) are in the movable sleeve (3)
- second variant Fig. 4: circulation channels (b) are partially in the movable sleeve (3) and partially in the casing (1)
- third variant Fig. 5: circulation channels (b) are in the casing (1)

To achieve axial movement, the sleeve (3) Fig. 1 needs guidance which it gets from the inclined surface on support (6). Since the sleeve (3) is not subject to axial forces, there is one spring located at the support (7) which is not depicted in the drawing.

Sleeve (3) can move angularly (arcuately) to change the fluid flow. Regardless of the rotational direction of the rotor, by turning the sleeve for the full circle in any direction the fluid flow is changed from zero to maximum in one direction and then through zero to maximum in the opposite direction and finally to zero again.

Rotor (excluding vanes) should not touch the sleeve.

Milan Sevic